Applicants: B. Ferek-Petric
Serial No. 10/085,072
Page 2

Best Available Copy

CLAIMS

1.-34.   (canceled)

35.   (currently amended) An implantable multi-chamber pacing system including coronary sinus blood flow sensing capability for detecting an episode of myocardial ischemia, comprising:

> atrial sense means for sensing atrial signals from an atrium of a patient's heart;

> ventricular sense means for sensing ventricular signals from a patient's right ventricle;

> coronary vein sense means disposed within a portion of a coronary sinus or great cardiac vein of the patient for sensing ventricular signals from the patent's left ventricle and for providing an myocardial ischemia signal representing a ~~relatively~~ reduced blood flow rate through the patient's coronary sinus over a period of time; and

> signal processing means for analyzing the ventricular signals, the atrial signals and the myocardial ischemia signal representing the ~~relatively~~ reduced blood flow rate to ~~declare~~ detect a myocardial ischemia cardiac condition based at least in part upon the myocardial ischemia signal.

36.   (currently amended) The pacing system of claim 35, wherein the signal processing means includes analyzing means for integrating the myocardial ischemia signal representing the ~~relatively~~ reduced blood flow rate from the coronary vein sense means.

37.   (currently amended) The pacing system of claim 35 and further including dispensing means for dispensing a therapeutic drug when the myocardial ischemia cardiac condition is ~~declared~~ detected.

38. (currently amended) The pacing system as described in claim 35, comprising programmer means for ~~energizing~~ controlling the signal processing means.

39. (previously presented) The pacing system as described in claim 35, further comprising defibrillation means for generating and providing a defibrillation pulse to the patient's heart.

40.-42. (canceled)

43. (currently amended) A computer readable medium for storing software encoded instructions for performing a method of cardiac pacing, including a coronary sinus blood flow sensing capability for detecting an episode of myocardial ischemia and optionally responding to a detected episode with a fluid therapeutic agent, said medium comprising:

> instructions for sensing atrial signals from an atrium of a patient's heart encoded into a computer readable medium;

> instructions for sensing ventricular signals from a patient's right ventricle encoded into the computer readable medium;

> instructions for sensing a blood flow metric from a sensor disposed within one of a portion of a coronary sinus and a cardiac vein and instructions for providing a myocardial ischemia signal representing a ~~relatively~~ reduced blood flow rate through the portion of one of the coronary sinus and the cardiac vein said instructions encoded into the computer readable medium; and

> instructions for analyzing the ventricular signals, the atrial signals and the myocardial ischemia signal representing the ~~relatively~~ reduced blood flow rate to ~~declare~~ detect a myocardial ischemia cardiac condition encoded into the computer readable medium.

Best Available Copy

44.   (currently amended) A medium according to claim 43, wherein the instructions for analyzing the myocardial ischemia signal comprises:

comparing a threshold blood flow rate to the ~~relatively~~ reduced blood flow rate and in the event that the threshold blood flow rate exceeds the ~~relatively~~ reduced blood flow rate, then ~~declaring~~ detecting the presence of a myocardial ischemia condition.

45.   (new) A pacing system according to claim 35, wherein the reduced blood flow rate comprises about a 25% decrease in blood flow rate.

46.   (new) A pacing system according to claim 45, wherein at least one of the atrial signals and the ventricular signals are adapted to detect changes in the S-T segment portion of a cardiac complex of the patient.

47.   (new) A pacing system according to claim 46, wherein the signal processing means further detects the myocardial ischemia cardiac condition based at least in part upon the detected changes of the S-T segment portion of the cardiac complex.